

rail is fitted with a bulwark, chain link fencing, wire mesh, or an equivalent.

(f) A suitable storm rail or hand grab must be installed where necessary in a passageway, at a deckhouse side, at a ladder, and a hatch where an individual might have normal access.

(g) A stern trawler must have doors, gates, or other protective arrangements at the top of the stern ramp at least as high as adjacent bulwarks or 39½ inches (1 meter), whichever is less.

[CGD 88–079, 56 FR 40393, Aug. 14, 1991; 56 FR 49822, Oct. 1, 1991]

Subpart E—Stability

§ 28.500 Applicability.

This subpart applies to each commercial fishing industry vessel which is 79 feet (24 meters) or more in length that is not required to be issued a load line under subchapter E of this chapter and that—

(a) Has its keel laid or is at a similar stage of construction or undergoes a major conversion started on or after September 15, 1991;

(b) Undergoes alterations to the fishing or processing equipment for the purpose of catching, landing, or processing fish in a manner different than has previously been accomplished on the vessel—these vessels need only comply with § 28.501 of this subpart; or

(c) Has been substantially altered on or after September 15, 1991.

[CGD 88–079, 56 FR 40393, Aug. 14, 1991; 56 FR 47679, Sept. 20, 1991, as amended by CGD 88–079, 57 FR 364, Jan. 6, 1992]

§ 28.501 Substantial alterations.

(a) Except as provided in paragraph (b) of this section, a vessel that is substantially altered, including the cumulative effects of all alterations, need not comply with the remainder of this subpart, provided that it has stability instructions developed by a qualified individual which comply with § 28.530 (c) through (e).

(b) A vessel that is substantially altered in a manner which adversely affects its stability, including the cumulative effects of all alterations, need not comply with the remainder of this subpart, provided the stability instructions required by paragraph (a) of this

section are based on loading conditions or operating restrictions, or both, which compensate for the adverse affects of the alterations.

(c) The following changes to a vessel's lightweight characteristics are considered to adversely affect vessel stability:

(1) An increase in the vertical center of gravity at lightweight by more than 2 inches (51 millimeters) compared to the original lightweight value.

(2) An increase or decrease of lightweight displacement by more than 3 percent of the original lightweight displacement.

(3) A shift of the longitudinal center of gravity of more than 1 percent of the vessel's length.

(d) In determining whether or not a vessel's stability has been adversely affected, a qualified individual must, at a minimum, consider the net effects on stability of any:

(1) Reduction of the downflooding angle;

(2) Increase in the maximum heeling moment caused by fishing gear or weight lifted over the side due to changes in lifting arrangement or capacity;

(3) Reduction in freeing port area;

(4) Increase in free surface effects, including increased free surface effects due to water on deck associated with any increase in length or height of bulwarks;

(5) Increase in projected wind area;

(6) Decrease in the angle of maximum righting arm;

(7) Decrease in the area under the righting arm curve; and

(8) Increase in the surface area on which ice can reasonably be expected to accumulate.

§ 28.505 Vessel owner's responsibility.

(a) Where a test or calculations are necessary to evaluate stability, it is the owner's responsibility to select a qualified individual to perform the test or calculations.

(b) Test results and calculations developed in evaluating stability must be maintained by the owner.

§ 28.510 Definition of stability terms.

Downflooding means the entry of seawater through any opening into the